FIVE YEAR HISTORY OF THE GYPSY MOTH ON THE ALLEGHENY NATIONAL FOREST PENNSYLVANIA 1988

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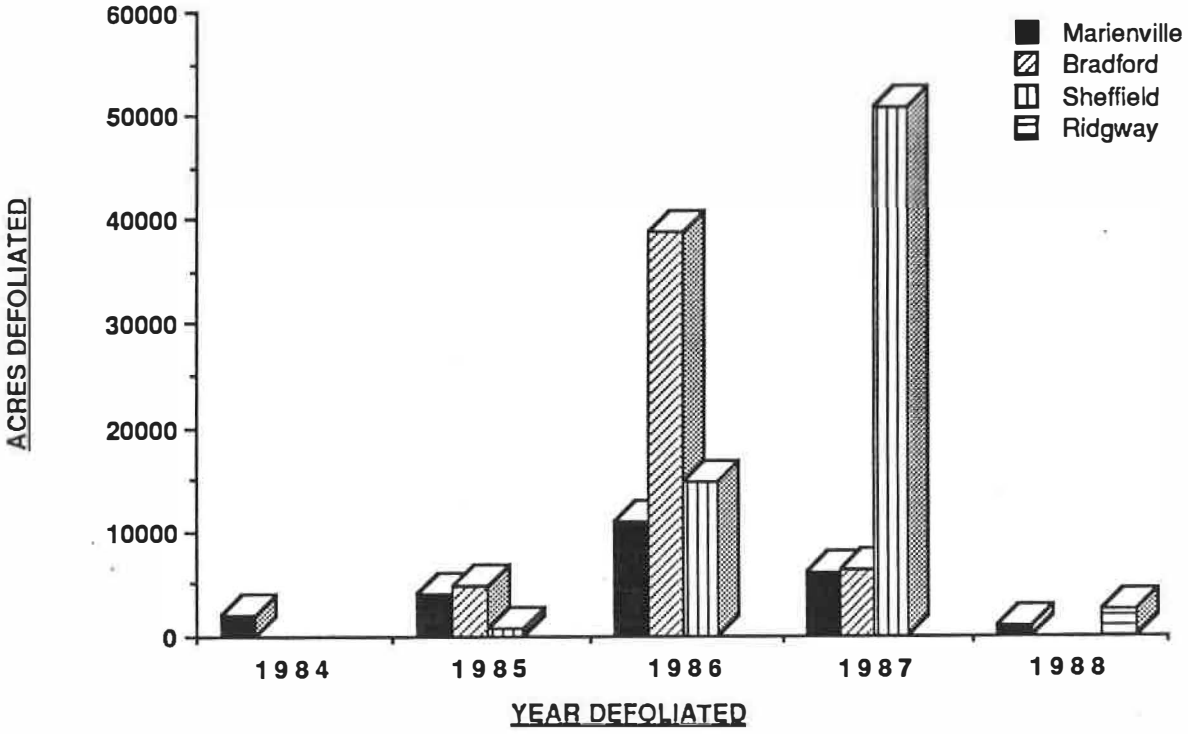
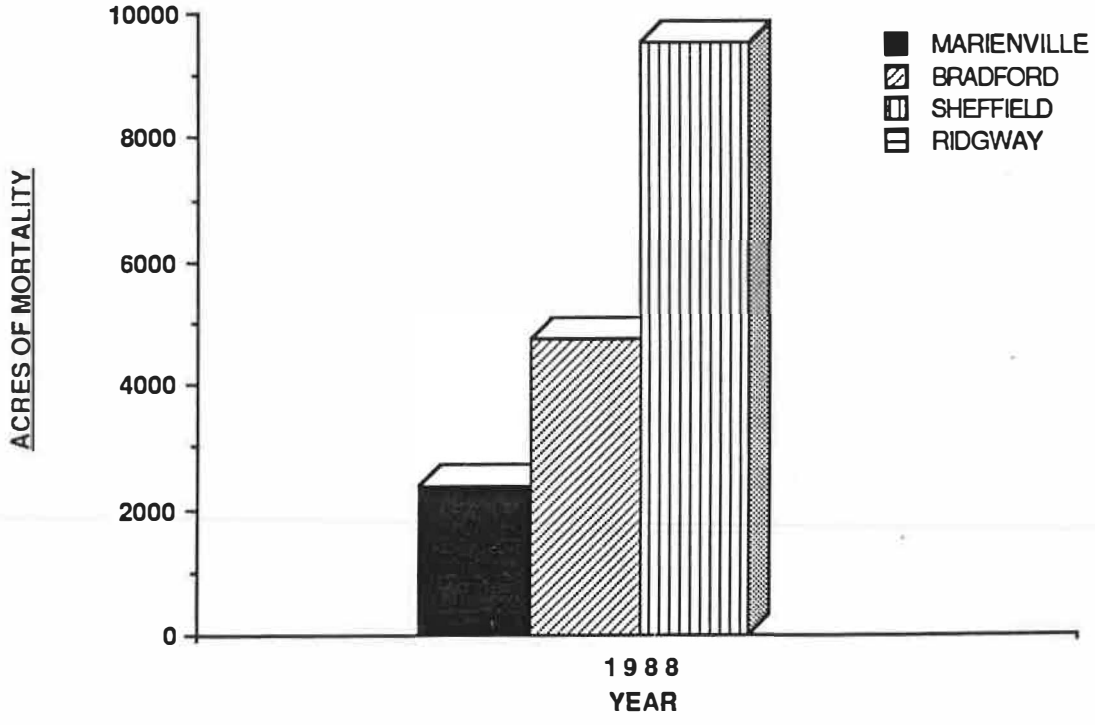
FOREST PEST MANAGEMENT
STATE AND PRIVITE FORESTRY
NORTHEASTERN AREA
MORGANTOWN, WV.

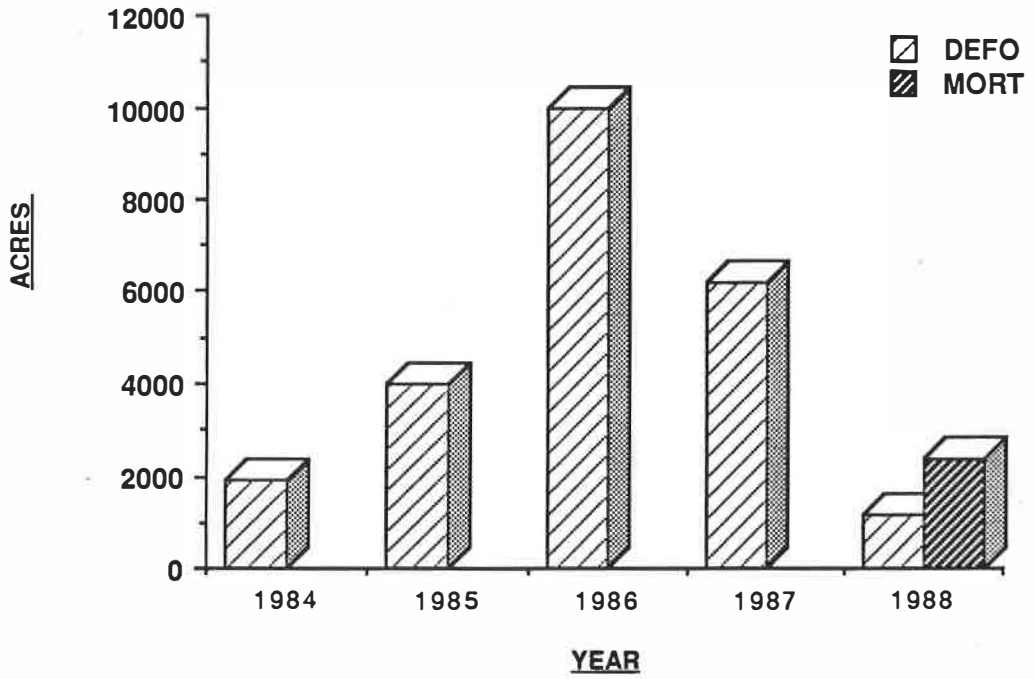
GRAPH 1. GYPSY MOTH DEFOLIATION: 1984-1988. ALLEGHENY NATIONAL FOREST.



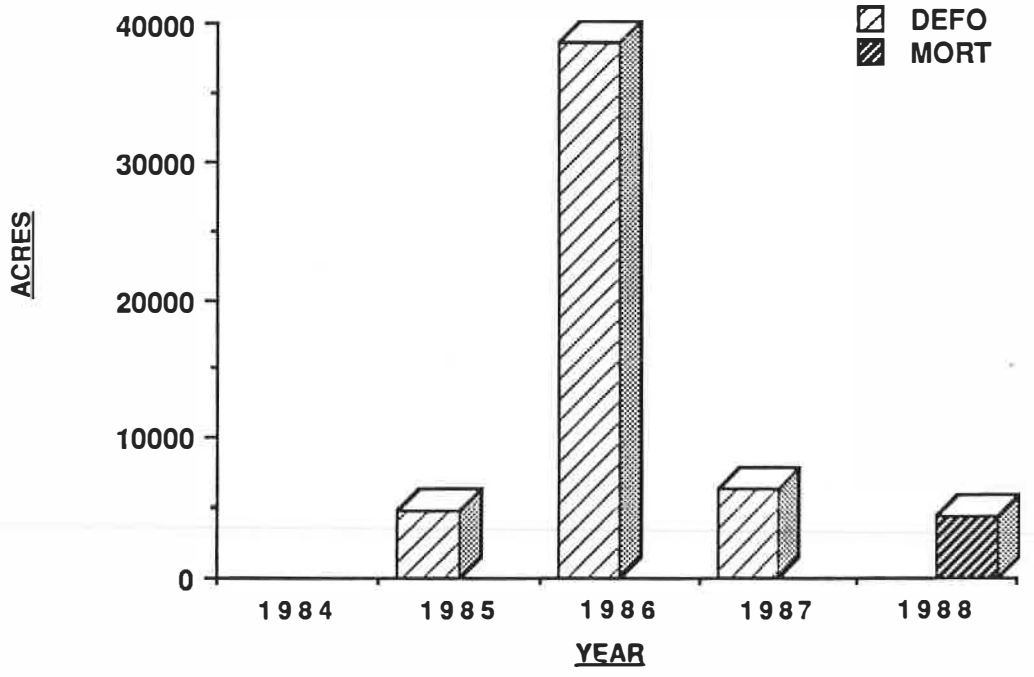
GRAPH 2. MORTALITY RECORDED: 1988. ALLEGHENY NATIONAL FOREST



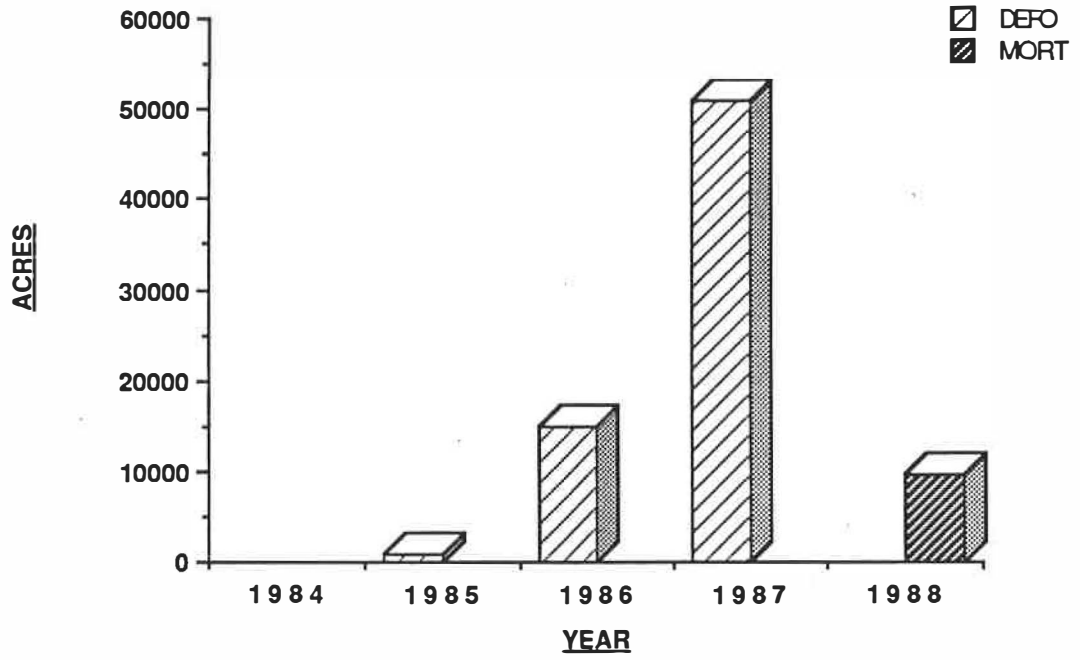
GRAPH 3. ACRES OF DEFOLIATION AND MORTALITY FOR THE MARIENVILLE RANGER DISTRICT: 1984-1988.



GRAPH 4. ACRES OF DEFOLIATION AND MORTALITY FOR THE BRADFORD RANGER DISTRICT, 1984-1988



GRAPH 5. ACRES OF DEFOLIATION AND MORTALITY FOR THE SHEFFIELD RANGER DISTRICT: 1984-1988.



GRAPH 6. ACRES OF DEFOLIATION AND MORTALITY FOR THE RIDGWAY RANGER DISTRICT: 1984-1988.

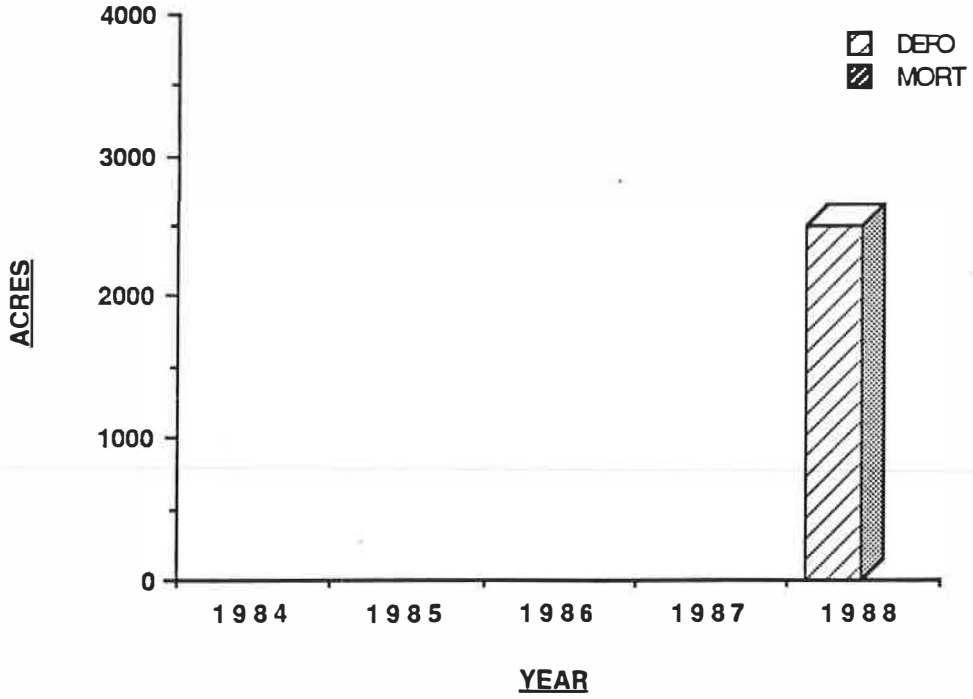


TABLE 1. GYPSY MOTH DEFOLIATION AND MORTALITY: 1984-1988
ALLEGHENY NATIONAL FOREST, MARIENVILLE RANGER DISTRICT.

RD / ENT.AREA	TOTAL ACRES	DEFOLIATION 1984 %	1984 ACRES	1985 %	1985 ACRES	1986 %	1986 ACRES	1987 %	1987 ACRES	1988 %	1988 ACRES	MORTALITY 1988 %	1988 ACRES
M-1	3946	3	120	20	800	93	3680	35	1381	0	0	10	374
M-2	2559	0	0	28	720	30	760	0	0	0	0	4	109
M-3	2392	0	0	38	920	57	1360	20	478	0	0	0	0
M-4	2223	13	280	27	600	83	1840	30	667	0	0	30	675
M-5	3711	0	0	0	0	24	880	0	0	0	0	4	135
M-6	5284	0	0	1	60	26	1360	50	2642	0	0	9	473
M-7	4126	21	880	17	720	0	0	0	413	4	160	4	183
M-8	3815	17	640	0	0	0	0	0	0	13	480	0	0
M-9	4680	0	0	0	0	7	320	0	0	0	0	0	0
M-10	1389	0	0	11	160	58	800	20	278	0	0	30	421
M-11	19559	0	0	.1	20	0	0	2	322	3	495	0	0
TOTAL ACRES:	53684		1920		4000		11000		6181		1135		2370

TABLE 2. GYPSY MOTH DEFOLIATION AND MORTALITY: 1984-1988
ALLEGHENY NATIONAL FOREST, BRADFORD RANGER DISTRICT.

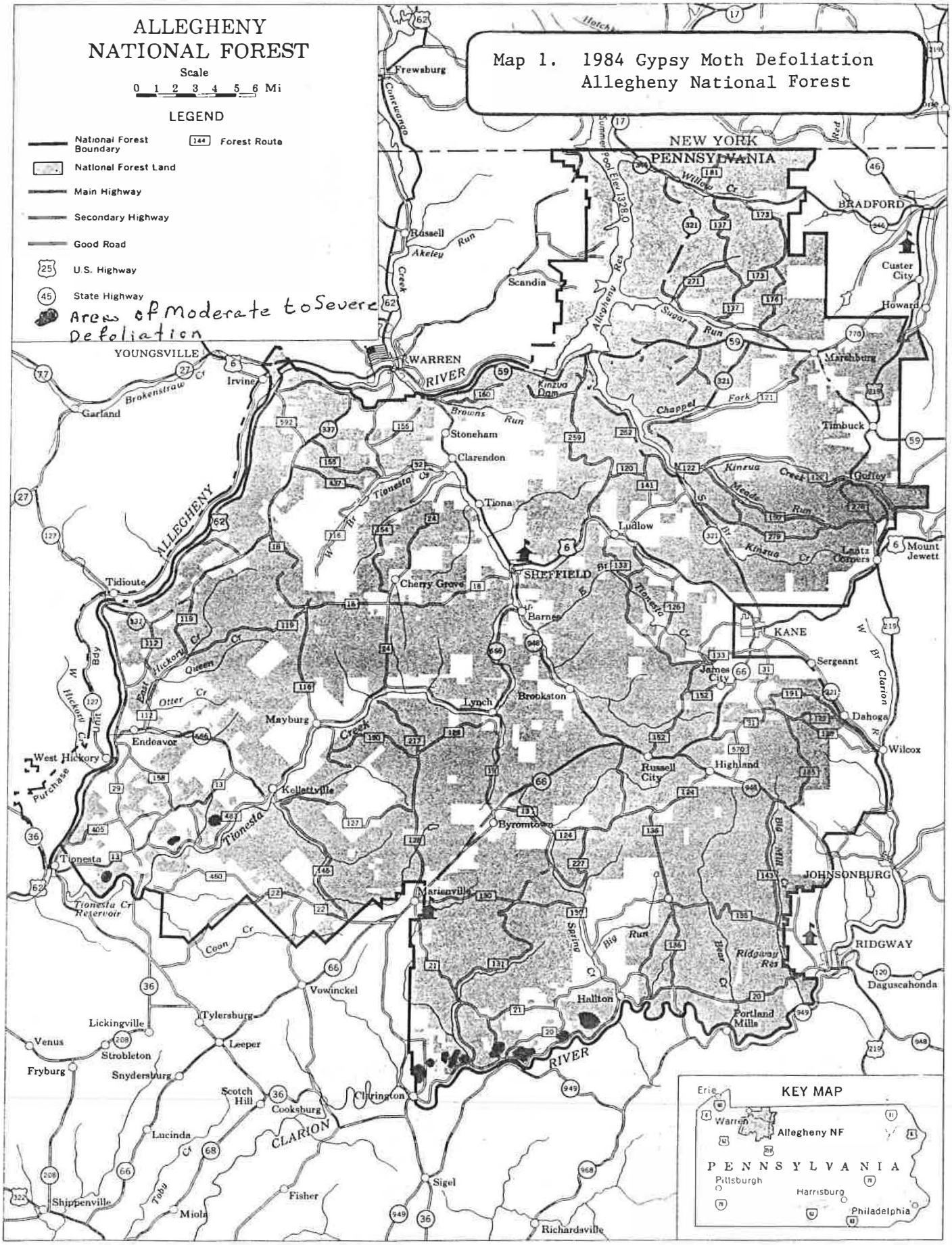
		DEFOLIATION										MORTALITY	
RD /	TOTAL	1984		1985		1986		1987		1988		1988	
ENT.AREA	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES	%	ACRES
B-1	9188	0	0	31	2879	90	8308	6	520	0	0	9	792
B-2	4073	0	0	6	240	86	3513	15	600	0	0	0	0
B-3	4805	0	0	0	0	84	4045	37	1800	0	0	15	719
B-4	5943	0	0	0	0	39	2320	22	1280	0	0	.44	26
B-5	5042	0	0	0	0	2	80	3	160	0	0	0	0
B-6	5882	0	0	0	0	73	4282	10	560	0	0	11	660
B-7	4967	0	0	8	440	94	4587	2	120	0	0	13	626
B-8	4344	0	0	0	0	14	600	0	0	0	0	0	0
B-9	6078	0	0	18	1120	51	3120	0	0	0	0	8	496
B-10	5330	0	0	22	120	87	4650	25	1320	0	0	27	1419
B-11	4392	0	0	0	0	39	1720	0	0	0	0	0	0
B-12	6367	0	0	0	0	21	1360	0	0	0	0	0	0
TOTAL ACRES:													
	66411		0		4799		38685		6360		0		4738

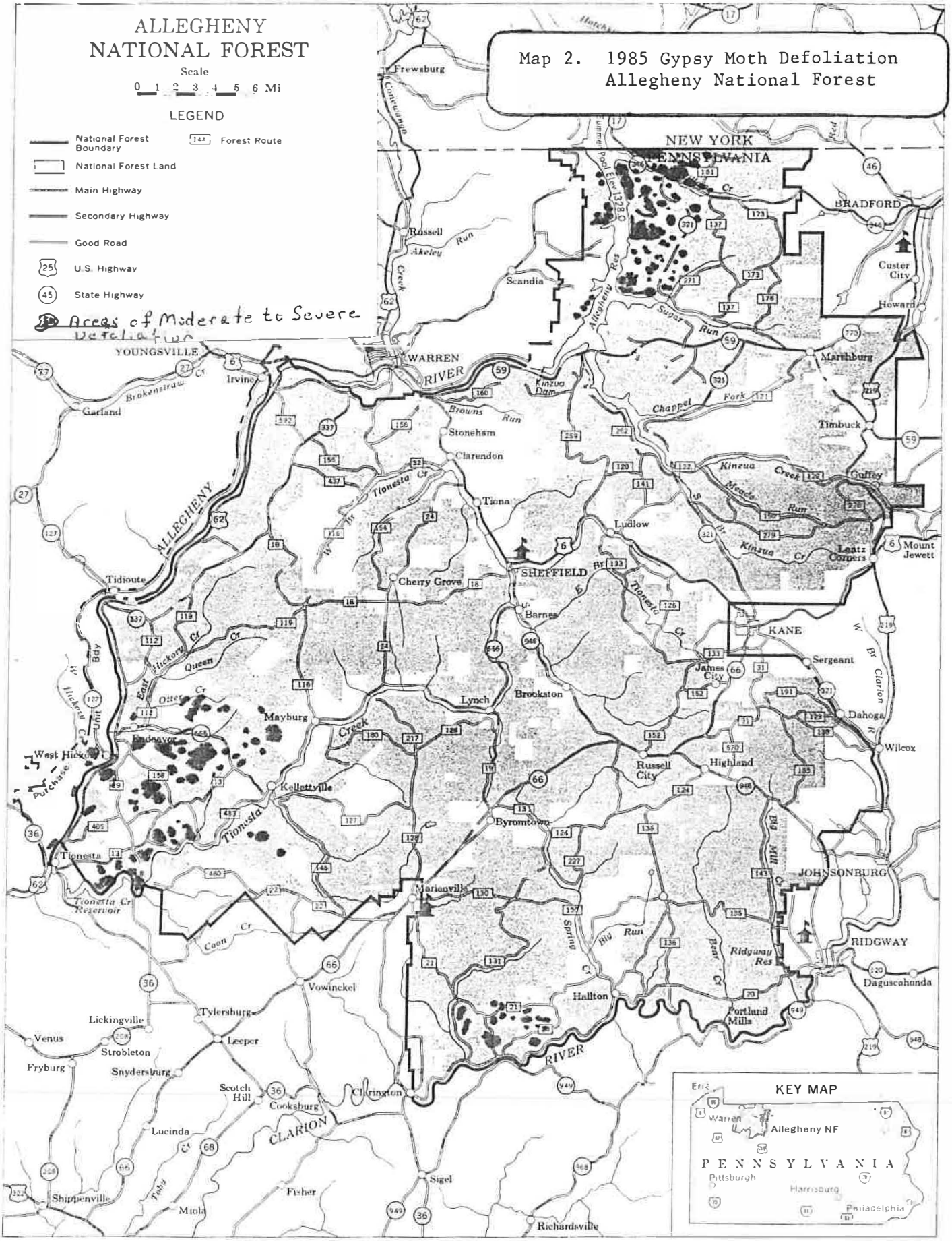
TABLE 3. GYPSY MOTH DEFOLIATION AND MORTALITY: 1984-1988
ALLEGHENY NATIONAL FOREST, SHEFFIELD RANGER DISTRICT.

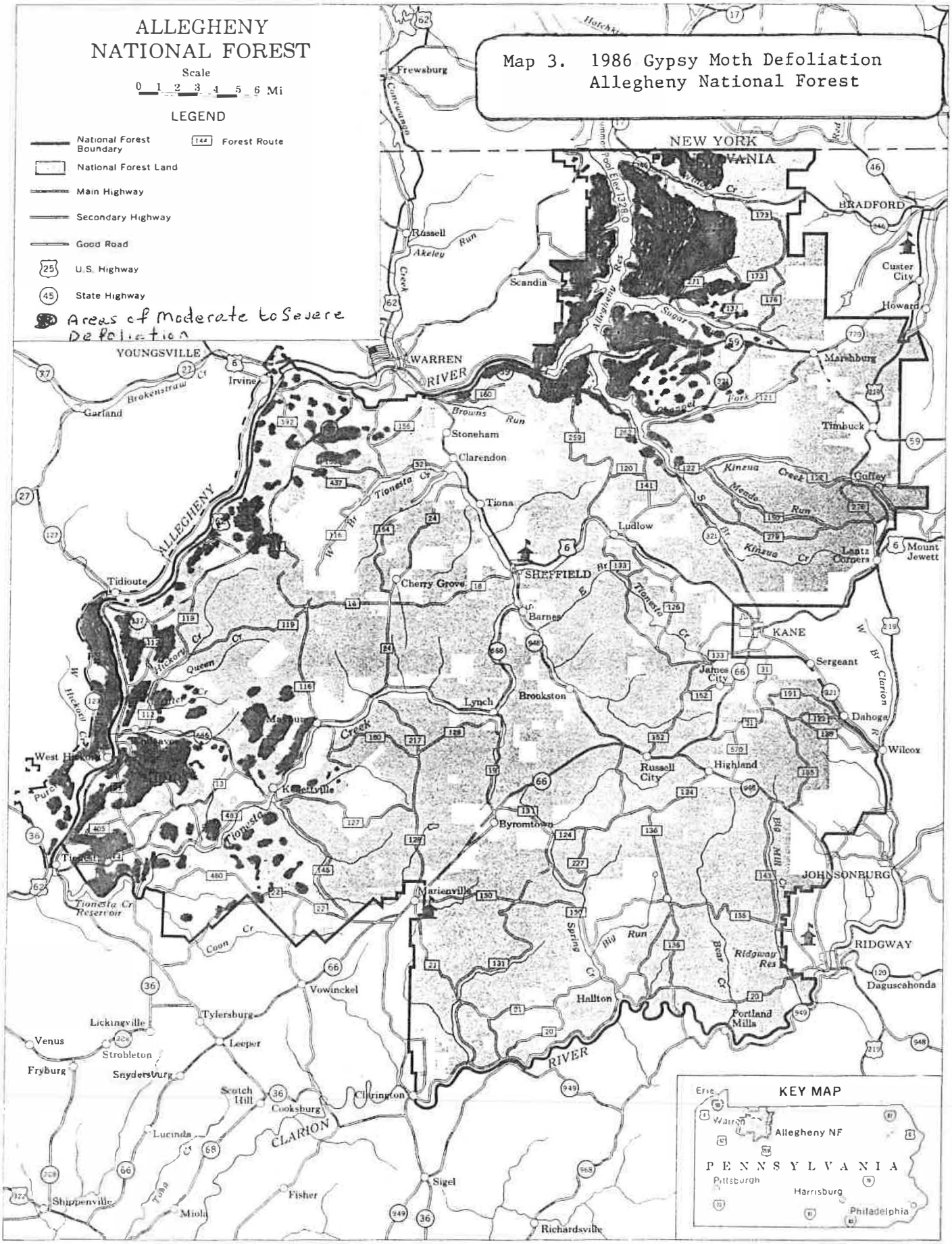
RD / ENT.AREA	TOTAL ACRES	DEFOLIATION 1984 %	1984 ACRES	1985 %	1985 ACRES	1986 %	1986 ACRES	1987 %	1987 ACRES	1988 %	1988 ACRES	MORTALITY 1988 %	1988 ACRES
S-1	4239	0	0	0	0	20	840	65	2755	0	0	17	725
S-2	4543	0	0	0	0	2	80	100	4543	0	0	9	403
S-3	5787	0	0	0	0	23	1320	100	5787	0	0	37	2131
S-4	7790	0	0	0	0	43	3360	100	7790	0	0	49	3823
S-5	4028	0	0	0	0	16	640	100	4028	0	0	18	730
S-6	4093	0	0	0	0	14	560	100	4093	0	0	29	1200
S-7	5819	0	0	0	0	59	3440	75	4364	0	0	2	106
S-8	10010	0	0	0	0	.4	40	97	9720	0	0	2	206
S-9	3165	0	0	4	120	8	240	70	2200	0	0	2	59
S-10	3886	0	0	14	560	58	2240	13	520	0	0	4	141
S-11	4041	0	0	3	120	29	1160	16	640	0	0	.5	20
S-12	7136	0	0	0	0	10	720	60	4282	0	0	0	0
S-13	2009	0	0	0	0	8	160	5	100	0	0	0	0
TOTAL ACRES	66546		0		800		14800		50822		0		9544

TABLE 4. GYPSY MOTH DEFOLIATION AND MORTALITY: 1984-1988
ALLEGHENY NATIONAL FOREST, RIDGWAY RANGER DISTRICT.

RD / ENT.AREA	TOTAL ACRES	DEFOLIATION 1984 %	1984 ACRES	1985 %	1985 ACRES	1986 %	1986 ACRES	1987 %	1987 ACRES	1988 %	1988 ACRES	MORTALITY 1988 %	1988 ACRES
R-1	6172	0	0	0	0	0	0	0	0	29	1760	0	0
R-2	5580	0	0	0	0	0	0	0	0	11	600	0	0
R-3	9649	0	0	0	0	0	0	0	0	1.5	140	0	0
TOTAL ACRES:	21401		0		0		0		0		2500		0
GRAND TOTAL ACRES:	208042		1920		9599		64485		63363		3635		16652


ALLEGHENY
NATIONAL FOREST
Scale
0 1 2 3 4 5 6 Mi
LEGEND
National Forest Boundary
144 Forest Route
National Forest Land
Main Highway
Secondary Highway
Good Road
25 U.S. Highway
45 State Highway
Area of Moderate to Severe Defoliation
Map 1. 1984 Gypsy Moth Defoliation
Allegheny National Forest
NEW YORK
PENNSYLVANIA
Frewsburg
Conewango Cr
Russell
Akeley Run
Scandia
Allegheny Res 1328.0
Willow Cr
BRADFORD
Custer City
Howard
Sugar Run
Marchburg
YOUNGSVILLE
Irvine
Garland
Brokenstraw Cr
WARREN
ALLEGHENY RIVER
Kinzua Dam
Browns Run
Stoneham
Clarendon
Chappel Fork
Timbuck
Kinzua Creek
Meade Run
Gaffey
Tionesta Cr
Tiona
Ludlow
W Br Kinzua Cr
Leatz Corners
Mount Jewett
Tidioute
Cherry Grove
SHEFFIELD
Barnes
Tionesta Cr
KANE
Sergeant
James City
W Br Clarion R
Queen Cr
East Hickory Cr
Otter Cr
Lynch
Brookston
Mayburg
Endeavor
Dahoga
Wilcox
West Hickory
Purchase
Kellettville
Russell City
Highland
Tionesta
Byromville
Tionesta Cr Reservoir
Marienville
Coon Cr
Big Run
Spring Cr
Bear Cr
JOHNSONBURG
RIDGWAY
Ridgway Res
Dagusca honda
Vowinckel
Hallton
Portland Mills
Tylersburg
Lickingville
Venus
Strobleton
Leeper
Fryburg
Snydersburg
Scotch Hill
Cooksburg
Clarington
CLARION RIVER
Lucinda
Shippenville
Toby Cr
Miola
Fisher
Sigel
Richardsville
KEY MAP
Erie
Warren
Allegheny NF
PENNSYLVANIA
Pittsburgh
Harrisburg
Philadelphia


ALLEGHENY
NATIONAL FOREST
Scale
0 1 2 3 4 5 6 Mi
LEGEND
National Forest Boundary
Forest Route
National Forest Land
Main Highway
Secondary Highway
Good Road
U.S. Highway
State Highway
Acres of Moderate to Severe Defoliation
Map 2. 1985 Gypsy Moth Defoliation
Allegheny National Forest
NEW YORK
PENNSYLVANIA
WARREN
BRADFORD
KANE
SHEFFIELD
YOUNGSVILLE
JOHNSONBURG
RIDGWAY
ALLEGHENY RIVER
CLARION RIVER
Frewsburg
Russell
Scandia
Custer City
Howard
Marshburg
Timbuck
Guffey
Mount Jewett
Leatz Corners
Irvine
Garland
Stoneham
Clarendon
Tiona
Ludlow
Cherry Grove
Barnes
Sergeant
James City
Dahoga
Wilcox
Highland
Russell City
Brookston
Lynch
Mayburg
Kellettville
Byromtown
Tionesta
Marienville
Vowinckel
Tylersburg
Lickingville
Venus
Strobleton
Fryburg
Snydersburg
Leeper
Scotch Hill
Cooksburg
Clarington
Lucinda
Shippenville
Fisher
Sigel
Richardsville
Miola
Hallton
Portland Mills
Daguscahonda
Ridgway Res
Tidioute
Hickory Cr
Queen Cr
East Hickory Cr
Otter Cr
West Hickory
Tionesta Cr Reservoir
Coon Cr
Spring Cr
Big Mill Cr
Bear Cr
Kinzua Dam
Kinzua Creek
Meade Run
Sugar Run
Chappel Fork
Browns Run
Akeley Run
Allegheny Res
Summer Pool Elev 1328.0
KEY MAP
Erie
Warren
Allegheny NF
PENNSYLVANIA
Pittsburgh
Harrisburg
Philadelphia


ALLEGHENY
NATIONAL FOREST
Scale
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LEGEND
National Forest Boundary
144 Forest Route
National Forest Land
Main Highway
Secondary Highway
Good Road
25 U.S. Highway
45 State Highway
Areas of Moderate to Severe Defoliation
Map 3. 1986 Gypsy Moth Defoliation
Allegheny National Forest
NEW YORK
PENNSYLVANIA
Frewsburg
Russell
Akeley Run
Scandin
Allegheny Res
Sugar
BRADFORD
Custer City
Howard
Marshburg
Timbuck
Gulley
Mount Jewett
Lantz Corners
KANE
Sergeant
James City
Dahoga
Wilcox
Highland
Russell City
JOHNSONBURG
RIDGWAY
Daguscahonda
Ridgway Res
Portland Mills
Hallton
Byromtown
Brookston
Lynch
Ludlow
Tiona
Clarendon
Stoneham
Browns Run
Garland
Brokenstraw Cr
Irvine
YOUNGSVILLE
WARREN
ALLEGHENY RIVER
Tidioute
Cherry Grove
SHEFFIELD
Barnes
Tionesta Cr
Tionesta Cr Reservoir
Marienville
Kellettville
West Hickory
Hickory Cr
Queen Cr
Coon Cr
Vowinckel
Tylersburg
Leeper
Lickingville
Venus
Strobleton
Fryburg
Snydersburg
Scotch Hill
Cooksburg
Clarington
Lucinda
CLARION RIVER
Shippenville
Fisher
Sigel
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Erie
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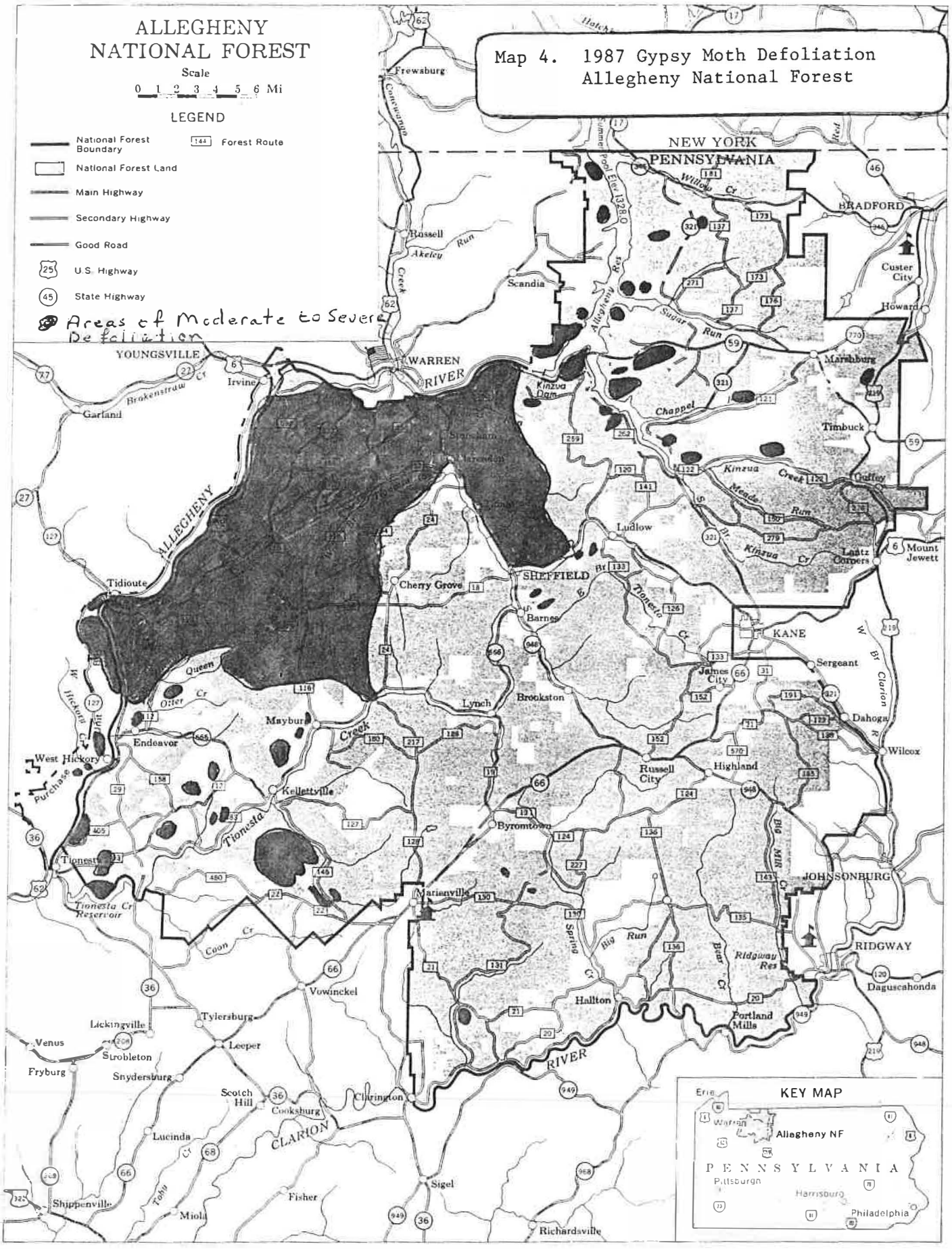
Pittsburgh
Harrisburg
Philadelphia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Scale
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LEGEND
National Forest Boundary
144 Forest Route
National Forest Land
Main Highway
Secondary Highway
Good Road
25 U.S. Highway
45 State Highway
Areas of Moderate to Severe Defoliation
Map 4. 1987 Gypsy Moth Defoliation
Allegheny National Forest
NEW YORK
PENNSYLVANIA
Frewsburg
Russell
Akeley Run
Scandia
Summer Pool Elev. 1328.0
Willow Cr
BRADFORD
Custer City
Howard
Sugar Run
Marshburg
Kinzua Dam
Chappel
Timbuck
Kinzua Creek
Quiley
Mead Run
Ludlow
Kinzua Cr
Mount Jewett
Laatz Campers
YOUNGSVILLE
Irvine
Brokenstraw Cr
Garland
WARREN
ALLEGHENY RIVER
Tidioute
Cherry Grove
SHEFFIELD
Barnes
Tionesta Cr
KANE
Sergeant
James City
Brookston
Lynch
Queen
Otter Cr
Mayburg
Endeavor
West Hickory
Hickory Cr
Tionesta
Kellettville
Byromtown
Russell City
Highland
Dahoga
Wilcox
Clarion R
Big Mill Cr
JOHNSONBURG
Marienville
Tionesta Cr Reservoir
Coon Cr
Spring Run
Big Run
Bear Cr
Ridgway Res
RIDGWAY
Daguscahonda
Vowinckel
Tylersburg
Hallton
Portland Mills
Lickingville
Venus
Leeper
Strobleton
Fryburg
Snydersburg
Scotch Hill
Cooksburg
Clarington
CLARION RIVER
Lucinda
Shippenville
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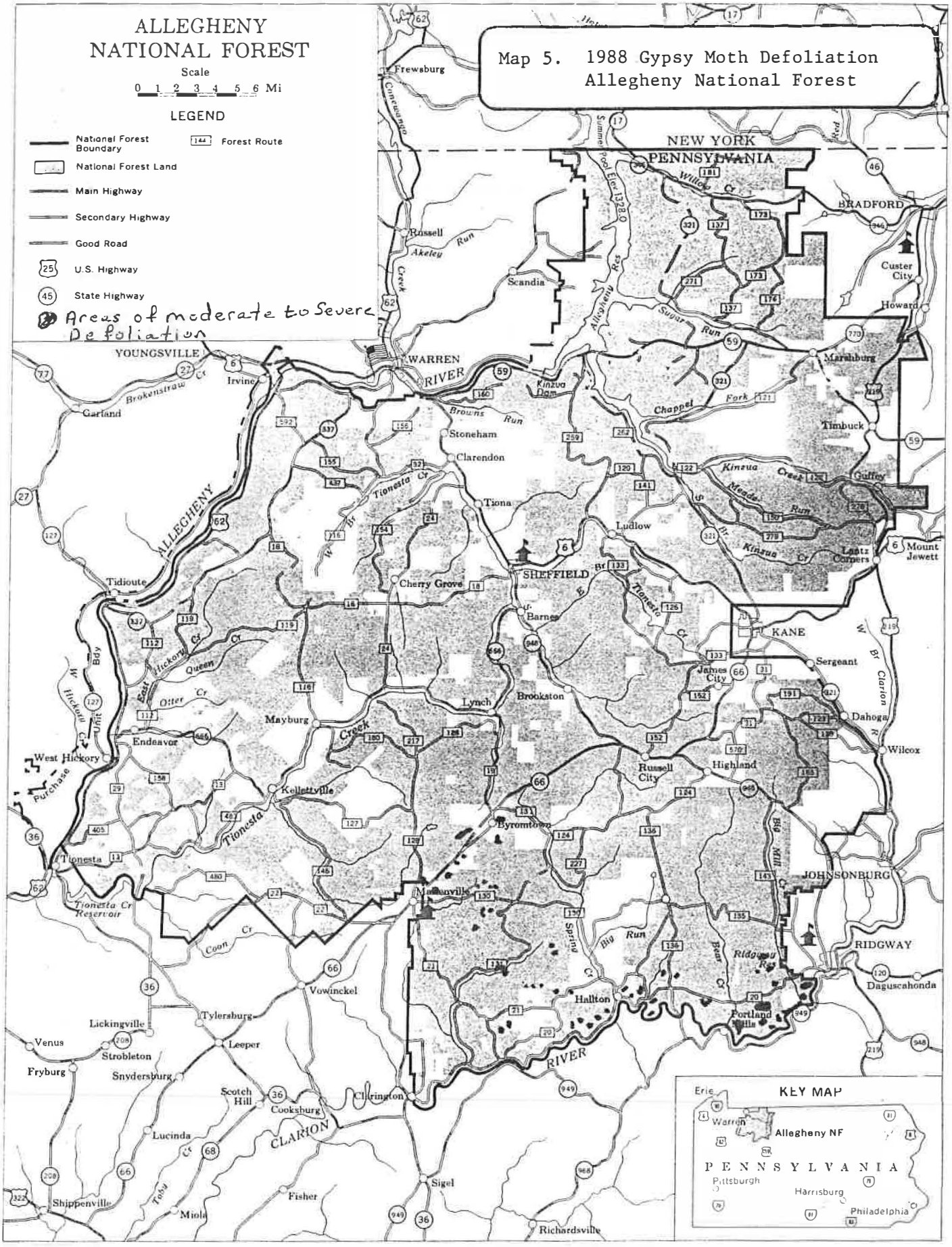
Harrisburg
Philadelphia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LEGEND
National Forest Boundary
144 Forest Route
National Forest Land
Main Highway
Secondary Highway
Good Road
25 U.S. Highway
45 State Highway
Areas of moderate to Severe Defoliation
Map 5. 1988 Gypsy Moth Defoliation
Allegheny National Forest
NEW YORK
PENNSYLVANIA
Frewsburg
Russell
Akeley Run
Scandia
Allegheny Res
Summer Pool Elev 1328.0
Willow Cr
BRADFORD
Custer City
Howard
Sugar Run
Marshburg
Chappel Fork
Timbuck
Kinzua Dam
Kinzua Creek
Guffey
Meade Run
Mount Jewett
Lantz Corners
Ludlow
SHEFFIELD
Barnes
Tionesta Cr
KANE
Sergeant
James City
Brookston
Lynch
Mayburg
Endeavor
West Hickory
Kellettville
Tionesta
Tionesta Cr Reservoir
Byromtown
Russell City
Highland
Dahoga
Wilcox
JOHNSONBURG
RIDGWAY
Daguscahonda
Hallton
Portland Mills
Vowinckel
Tylersburg
Lickingville
Venus
Strobleton
Leeper
Fryburg
Snydersburg
Scotch Hill
Cooksburg
Clarington
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Miola
YOUNGSVILLE
WARREN
Irvine
Garland
Stoneham
Clarendon
Tiona
Cherry Grove
Tidioute
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CLARION RIVER
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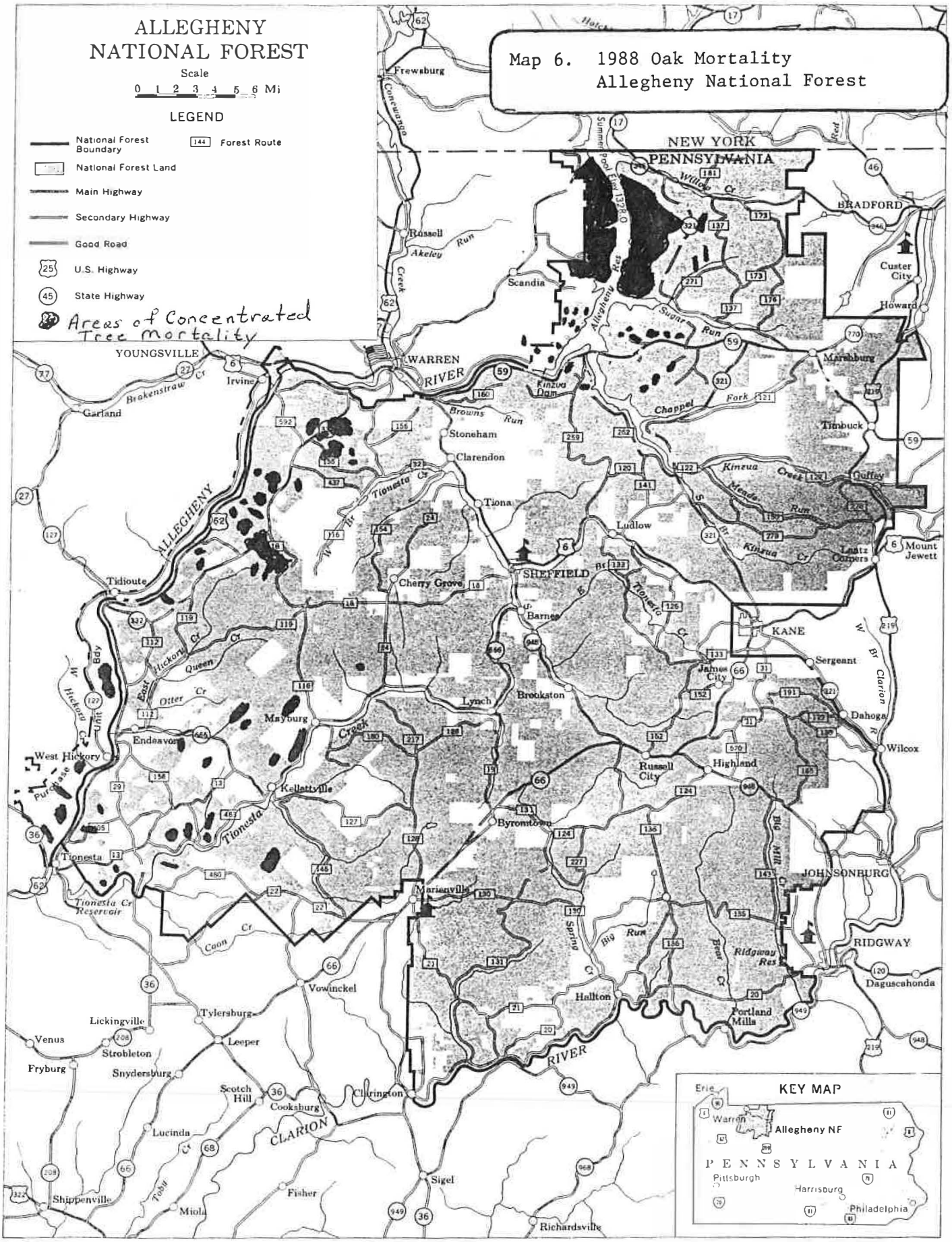
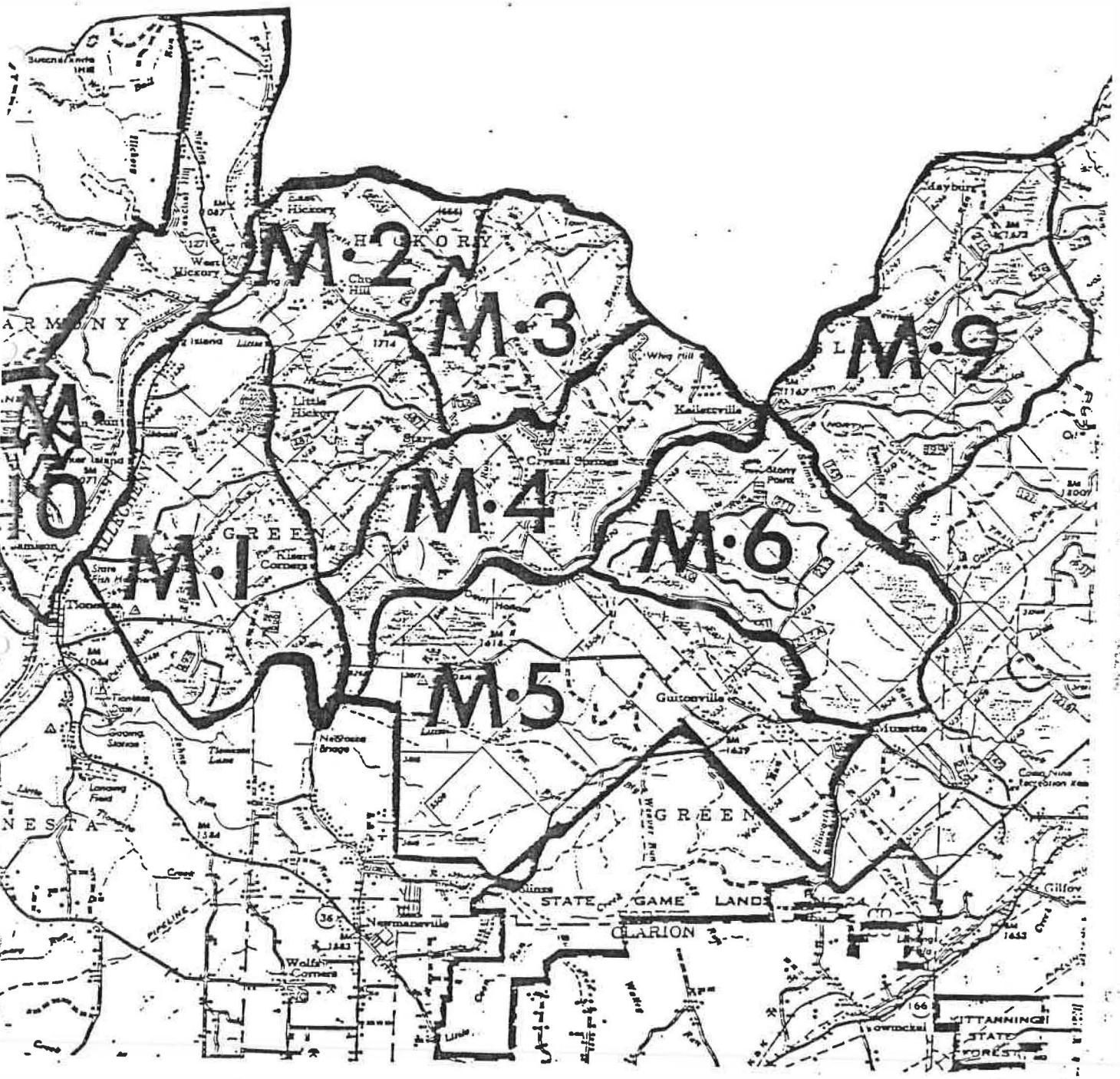
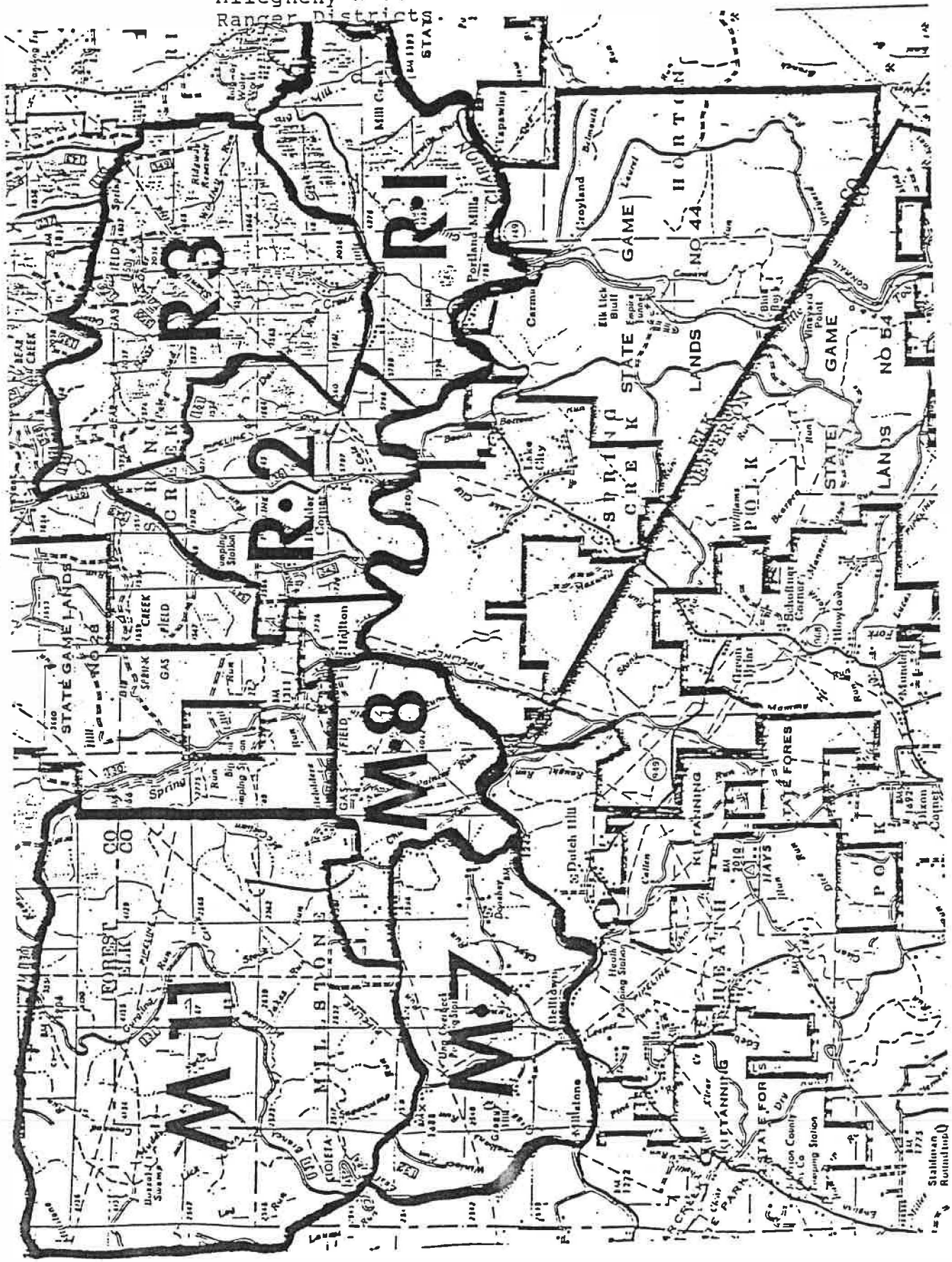
Harrisburg
Philadelphia


ALLEGHENY
NATIONAL FOREST
Scale
0 1 2 3 4 5 6 Mi
LEGEND
National Forest Boundary
144 Forest Route
National Forest Land
Main Highway
Secondary Highway
Good Road
25 U.S. Highway
45 State Highway
Areas of Concentrated Tree Mortality
Map 6. 1988 Oak Mortality
Allegheny National Forest
NEW YORK
PENNSYLVANIA
Frewsburg
Russell
Akeley Run
Scandia
Summer Pool Elev 1328.0
Willow Cr
BRADFORD
Custer City
Howard
Marshburg
Sugar Run
Allegheny Res
YOUNGSVILLE
WARREN
Irvine
Garland
Brokenstraw Cr
ALLEGHENY RIVER
Kinzua Dam
Browns Run
Stoneham
Clarendon
Tionesta Cr
Tiona
Chappel Fork
Timbuck
Guffey
Kinzua Creek
Mead Run
Ludlow
Kinzua Cr
Lantz Corners
Mount Jewett
SHEFFIELD
Barnes
Cherry Grove
Tidioute
Hickory Cr
Queen Cr
East Otter Cr
West Hickory Cr
Mayburg
Endeavor
West Hickory
Kellettville
Tionesta
Tionesta Cr Reservoir
Brookston
Lynch
Byromtown
Tionesta Cr
KANE
Sergeant
James City
Dahoga
Wilcox
Russell City
Highland
Big Mill Cr
JOHNSONBURG
Marienville
Coon Cr
Spring Cr
Big Run
Beaver Cr
Ridgway Res
RIDGWAY
Daguscahonda
Vowinckel
Hallton
Portland Mills
Tylersburg
Lickingville
Venus
Leeper
Strobleton
Fryburg
Snydersburg
Scotch Hill
Cooksburg
Clarington
CLARION RIVER
Lucinda
Toby Cr
Shippenville
Fisher
Sigel
Miola
Richardsville
KEY MAP
Erie
Warren
Allegheny NF
PENNSYLVANIA
Pittsburgh
Harrisburg
Philadelphia

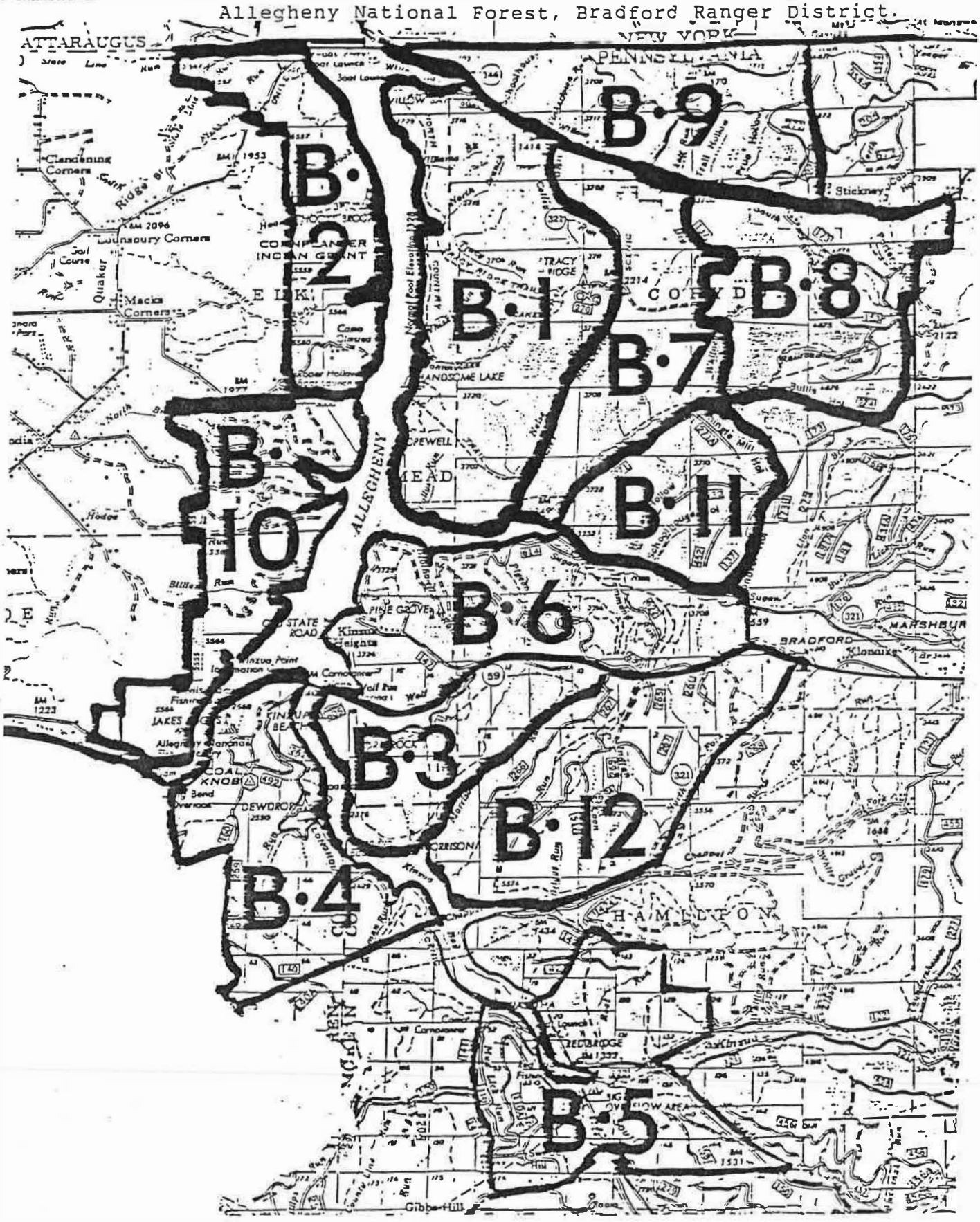
Map 7. 1988 Gypsy Moth Egg Mass Survey Entomological Areas
Allegheny National Forest, Marienville Ranger District.



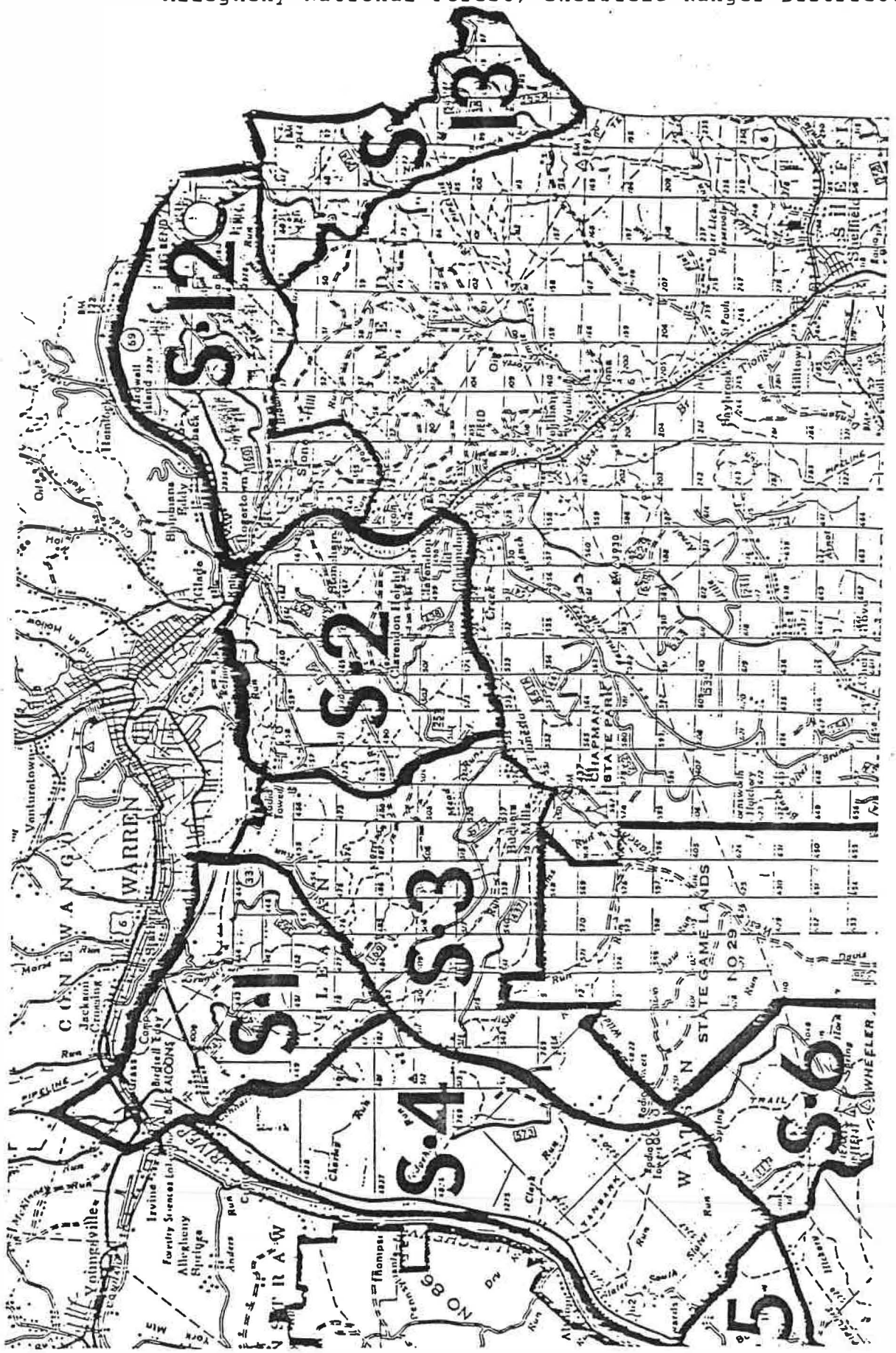
Map 8. 1988 Gypsy Moth Egg Mass Survey Entomological Areas, Allegheny National Forest, S.E. Marienville and Ridgway Ranger Districts.



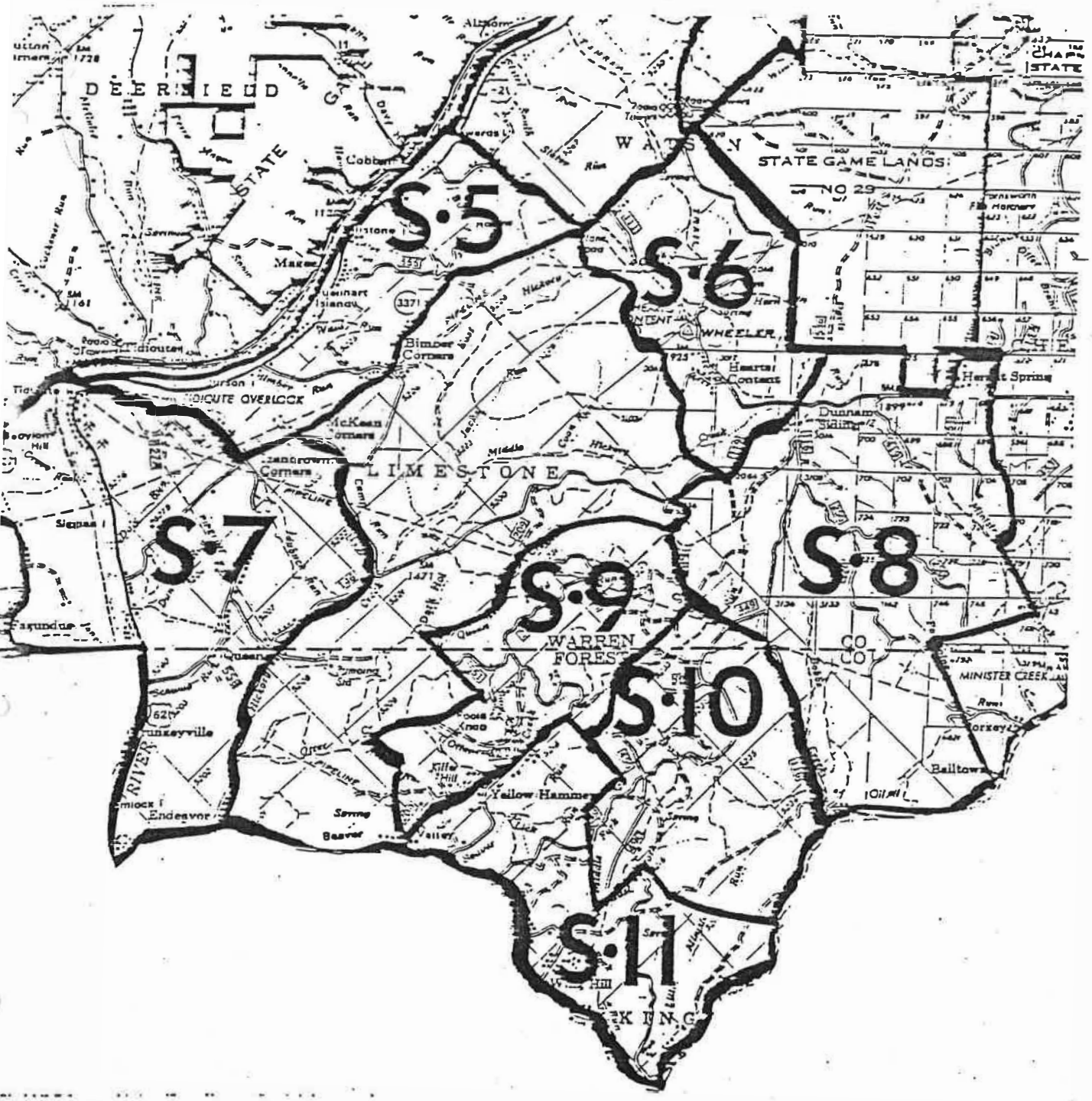
Map 9. 1988 Gypsy Moth Egg Mass Survey Entomological Areas
Allegheny National Forest, Bradford Ranger District.



Map 10. 1988 Gypsy Moth Egg Mass Survey Entomological Areas, Allegheny National Forest, Sheffield Ranger District.



Map 11. 1988 Gypsy Moth Egg Mass Survey Entomological Areas, Allegheny National Forest, Sheffield Ranger District.



United States

Forest Service
Department of Agriculture

NA MFO

Reply to: 3460 January 20, 1989

Subject: Five-year History of the Recent Gypsy Moth Outbreak on the Allegheny National Forest, Pennsylvania.

To: Forest Supervisor, ANF

This information documents the effects of the recent gypsy moth outbreak on the forest resources by Entomological Areas within the Allegheny National Forest. It is presented for use in preparation for the 1989 Gypsy Moth Environmental Analysis for the Allegheny National Forest Gypsy Moth Suppresion Project.

The enclosed graphs, tables, and maps show the defoliation and mortality resulting from the gypsy moth outbreak on the Allegheny National Forest from 1984 to 1988. The first two graphs show how the defoliation and mortality, respectively, was distribute through out the forest. The last four graphs show the acres and year of defoliation and mortality for each Ranger District. Included in the tables are the acreage and percent of area affected for both moderate and severe defoliation and mortality within the gypsy moth Entomological Areas formed in each Ranger District. The enclosed maps show these areas. Because only a small portion of the forest was used to form the Entomological Areas, and some defoliation and mortality occurred outside of these areas, the total acreages for defoliation and mortality are somewhat lower than presented in previous reports.

The Entomological Areas are groups of similar compartments used for the purpose of gypsy moth management. There have been 39 Entomological Areas formed throughout the forest since 1984 which total approximately 208,864 acres.

The information for this report was assembled by Mary Knott and Dave Lewellyn, FPM, using defoliation and mortality maps prepared by FPM personnel. The information for these maps was taken from photo interpretation and aerial sketchmap surveys conducted by Bob Acciavatti, FPM. The 1984 and 1987 defoliation information and the 1988 mortality data were collected using aerial sketchmap surveys while the 1985, 1986, and 1988 defoliation information was taken from low or high altitude, color-infrared aerial photography.

In 1984, only the Marienville Ranger District was affected by the gypsy moth when approximately 1,920 acres received moderate to severe defoliation. From 1985 to 1987 the gypsy moth outbreak expanded into the Bradford and Sheffield Ranger Districts from the Marienville Ranger District. Approximately 9,599

acres were defoliated within the Entomological Areas across the forest in 1985. The years 1986 and 1987 proved to be the worst years for defoliation with 64,485 and 63,363 acres, respectively, being defoliated within the Entomological Areas. The year 1988 saw a major decline in the amount on defoliation which occurred and a shift in the area of the Allegheny National Forest affected. The Entomological Areas on the Ridgway Ranger District received their first defoliation in 1988, with approximately 2,500 acres being affected. The Marienville Ranger District received 1,135 acres of defoliation in 1988 for a forest-wide total of 3,635 acres defoliated this past year. The accmulative defoliation within Entomological Areas for the last five years totaled approximately 143,002 acres.

Although 1988 was not a bad year for defoliation, approximately 16,652 acres of oak mortality were recorded in Entomological Areas within the Bradford, Sheffield and Marienville Ranger Districts. Approximately 18,400 acres of mortality were recorded forest-wide.

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